

REMARKS:

The Examiner's entry of the reply and amendment and care in reviewing the submission is greatly appreciated. Consideration of the application in view of the remarks below is respectfully requested.

5 Claims 27 and 98 have been amended above to more clearly claim that the "saprophytic" fungi are saprophytic "mushroom fungi." Support for the amendment is found, for example, at page 78, lines 7-9, which states "Fungi useful in the present invention include saprophytic fungi (including gilled, polypore and other types of mushrooms). . . ."

10 Pending claims 27, 33, 34, 42, 43, 48, 98 and 99 remain rejected under 35.U.S.C. § 102(b) as being anticipated by US 4,589,225 (Stensaas).

 US 4,589,225 (Stensaas) discloses a delivery system intended to benefit and to fertilize crops and other plants, comprising 1) a "primary packaging" material, 2) a fungal inoculant or "propagules of MF" microorganisms and
15 seeds. The disclosed seeds belong to generic plants including crops and woody plants within the broadest meaning of pending claims 33 and 48.

 The disclosed fungal inoculant or "propagules of MF" include spores and mycelium or hyphae. The disclosed "MF" microorganisms are generic mycorrhizal fungi, including the ecto- and endo- forms that are capable of
20 colonizing root surfaces and root insides. Thus, the office action states, the "MF" microbial inoculant as disclosed falls within the broadest reasonable

meaning of the claimed terms “saprophytic” and “mycorrhizal fungi” of the claims 27 and 98.

Applicant would again argue that the cited patent does not disclose the use of *both* saprophytic and mycorrhizal fungi and as such cannot anticipate
5 the present invention under 35 U.S.C. 102. The inventor may be his or her “own lexicographer,” *Fromson v. Advance Offset Plate, Inc.*, 720 F.2d 1565, 1569, 219 USPQ 1137, 1140 (Fed. Cir. 1983); applicant defines “saprophytic fungi” as wood and organic matter decomposers (application as originally filed at page 3, lines 2-3) and further states “Fungi useful in the present invention
10 include saprophytic fungi (including gilled, polypore and other types of mushrooms), mycorrhizal fungi (which form a mutually dependent, beneficial relationship with the roots of host plants ranging from trees to grasses to agricultural crops, as may certain saprophytic fungi), and fungi imperfecti. . . .” (application as originally filed at page 78, lines 7-12). Clearly applicant has
15 defined the saprophytic fungi useful with the present invention to be those mushroom fungi which live on wood and organic matter and has amended the claims above to better specify saprophytic mushroom fungi. Applicant would respectfully submit that the Stensaas “propagules of MF” only suggest the mycorrhizal fungi, not those saprophytic fungi or saprophytic mushroom fungi
20 as defined in the patent application.

Applicant would agree that Stensaas teaches cardboard “primary

packaging,” including a “cellulosic vehicle” (col. 5, line 24) or “container or envelope” (column 8, lines 56-57) and teaches “A package may be formed either by extruding a hydrated mixture to form capsules or pellets or by using paper technology to fabricate a ribbon, strip, or corrugated cardboard-type package, using paper product technology.” (col. 10, lines 28-32). Applicant would argue that while Stensaas teaches capsules, pellets, ribbons, strips and corrugated cardboard, it simply does not teach cardboard boxes—the “primary packages” are in fact small paper or cardboard packages of seeds/MF propagules/phosphorus, not “packages” useful for carrying other goods. The packages of Stensaas may optionally be covered by an envelope (col. 10, lines 44-46), which illustrates that Stensaas does not contemplate cardboard boxes, which are typically much larger than envelopes. As Stensaas does not even use the phrase “cardboard box,” it cannot be said to anticipate the pending claims of the present invention.

The Stensaas reference discloses cardboard containing seeds and mycorrhizae; it does not disclose a cardboard box as a delivery system, nor does it disclose saprophytic mushroom fungi as defined in the present application. It is therefore respectfully requested that the rejections under 35 U.S.C. § 102(b) be withdrawn.

Pending claims 27, 33, 34, 42, 43, 48, 98 and 99 as amended remain rejected under 35 U.S.C. § 103(a) as being unpatentable over US 4,589,225

(Stensaas) taken with US 5,022,182 (Anderson), Ineichen *et al.*, Changes in the fungus-specific, soluble carbohydrate pool during rapid and synchronous ectomycorrhizal formation of *Picea abies* with *Pisolithus tinctorius*, Mycorrhiza, 1992, 2(1) pages 1-7 and Fravel *et al.*, Availability and application of biocontrol agents, Biological and Cultural Tests, 1996, Vol. 11, pages 1-7.

US 4,589,225 (Stensaas) is relied upon as for the disclosure of a mycotechnologies delivery system intended to benefit plant growth and to fertilize crops and other plants that comprises cellulosic matrix used for making cardboard packages, fungal inoculant of mycorrhizal microorganisms and plant seeds. The microorganisms and plant seeds combined with cardboard materials are generic species as disclosed by US 4,589,225. However, the reference by Ineichen *et al.* (entire document including abstract) demonstrates that a beneficial mycorrhizal microorganism such as *Pisolithus tinctorius* is capable of colonizing cardboard materials and developing ectomycorrhizal on root systems of plants such as *Picea abies*, thus being both mycorrhizal and saprophytic fungal inoculant.

US 5,022,182 (Anderson) and Fravel *et al.* are relied upon for the teaching of various biocontrol products that are beneficial for plant growth and crop fertilization wherein the biocontrol agents include various fungi including mycorrhizal (US 5,022,182) and saprophytic (Fravel *et al.*) fungal inoculants. The references teach that the products are applied in many ways including

seed treatment and provided in many forms including various packaging for combination of seeds with fungal inoculant. Anderson also demonstrates incorporation of informational tags and indicators fabricated from cardboard into the delivery systems of seeds and plant fertilizers including beneficial

5 microorganisms.

The office action states it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to obtain various biocontrol products as intended to benefit plant growth and crop fertilization including various fungal mycorrhizal and saprophytic inoculants,
10 applied in many ways and provided in many forms including various packaging for the combination of seeds with fungal inoculants. Thus, it is stated, the claimed invention as a whole was clearly *prima facie* obvious.

In the Response to Arguments, the Examiner continues to reject Applicant's arguments that the cited references do not teach the use of both
15 "saprophytic" and "mycorrhizal" fungal inoculants. Examiner notes that the mycorrhizal fungi are also saprophytic since they obtain nutrients from non-living matter in soil and further notes that Applicant applies the claimed term "saprophytic fungi" to fungi that form symbiotic, mutually beneficial relationships with a number of agricultural crops. The functional
20 characteristics of the claimed "saprophytic" and "mycorrhizal" fungal groups are stated to be the same or overlapping.

Applicant has amended the claims above to more clearly specify that the “saprophytic” fungi are “saprophytic mushroom fungi.” Applicant would respectfully submit that “saprophytic fungi (including gilled, polypore and other types of mushrooms)” as described in the specification are not disclosed by

5 Stensaas, Anderson, Ineichen *et al.* or Fravel *et al.*, and therefore cannot render the claims obvious. Rejections based on 35 U.S.C. § 103(a) must rest on a factual basis. *In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 177-78 (CCPA 1967).

Applicant would respectfully submit that while the references teach

10 cardboard materials, none of the cited references suggest, teach or would motivate one skilled in the art to adopt a “cardboard box” as the word “box” is not even used in the cited prior art. None of the references is directed to even a “boxlike” container. That which the references do not even mention they cannot teach, and therefore they cannot render the “box” of the present

15 invention obvious.

The Office Action states that “the term “box” or “cardboard box” is taught, suggested or at the very least encompassed by US 4,589,225 by teaching the use of a “container” (col. 4, line 31) made from “cardboard” (col. 10, line 31).” (Office Action page 8, last paragraph). Applicant would argue that

20 column 4, lines 28-31, refers to a “primary package” that may be “provided with an outer cover, container or envelope.” Stensaas contemplates a

cardboard/seeds/MF propagules primary package which may be contained in an outer cover, container or envelope, and such a container might be a cardboard container such as a cardboard box. However, Stensaas clearly contemplates a cardboard *primary* package and a *separate* outer "container,"

5 not utilizing the primary cardboard/seeds/MF package as the structural cardboard of a cardboard box container.

Finally, the Examiner notes that US 4,589,225 clearly suggests incorporation of both "MF" and "AB" microorganisms wherein "AB" belongs to actinomycetes (col. 2, lines 20-21 and col. 1, line 31). Applicant would note

10 that "AB" are actinomycete bacteria (col. 1, lines 32-33), and as such cannot make obvious the saprophytic mushroom fungi. Applicant would similarly argue that the *Pisolithus tinctorius* of Ineichen *et al.* and the various fungi of Fravel *et al.*, which appear to be primarily or exclusively fungi imperfecti, do not anticipate or make obvious the saprophytic mushroom fungi.

15 It is therefore respectfully requested that the rejection under 35 U.S.C. § 103(a) be withdrawn.

In view of the amendment of claims and remarks above, it is submitted that the claims are in condition for allowance. Reconsideration and withdrawal of the rejections and allowance of the claims is respectfully requested. The

20 Examiner is invited to telephone the undersigned if a telephonic interview would expedite resolution of any remaining matters.

Respectfully Submitted,

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MAY 12, 2008

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